

### REMARKS/ARGUMENTS

Applicant has herein amended claims 1, 7, 9-13, 19, 23-27. Applicant has herein cancelled claims 4-6, 16-18, 30 and 34 and added new claims 35-39. Claims 1-3, 7-15, 19-29, 31-33 and 35-39 will be in the application after entry of this amendment. Applicant requests a two (2) month extension of the time to reply to the office action and an appropriate fee is enclosed. Applicant hereby requests reconsideration in view of the foregoing amendments and the arguments made below.

The Examiner has rejected all of Applicant's claims under 35 U.S.C. § 103(a) in view of European Patent Application 1-133-071 A2 to Dabak ("Dabak") in combination with U.S. Patent 6,304,618 to Hafeez et al. ("Hafeez"). For a rejection under section 103 to stand, each and every element must be taught or suggested by the references as combined. M.P.E.P. § 2143.03. The Examiner admits that Dabak does not teach a method that can be applied to asynchronous users, but points to Hafeez for such teachings. Applicant, while not necessarily agreeing with the Examiner, notes that even assuming that the Examiner is correct regarding this aspect of Dabak and Hafeez, some embodiments of Applicant's disclosure make use of known training or pilot symbols from both first and second users for detection and channel estimation, thus obviating the need for semi-blind initialization. Additionally, the use of pilot symbols from *both* users is not possible in environments where one "user" is an interference signal from outside the system, but pilot symbols from both users are often available in environments where co-channel interference is a prime concern, as described in Applicant's disclosure beginning at page 3, line 19.

Applicant has amended all independent claims herein to recite the use of "known pilot symbols for the first user and the second user." Support for this recitation is found throughout Applicant's disclosure, for example, at page 12, lines 17-24. Thus, Applicant's invention, in pertinent part as claimed, is directed to asynchronous users and the use of pilot symbols from *both* users. Such a system cannot result from the combination of Dabak and Hafeez. Additionally, a *prima facie* case of obviousness established by combining two or more references also requires that a suggestion, teaching or motivation to combine the references must be found in the references themselves or in the knowledge generally available to a person having ordinary skill in the art. *See In re Fine*, 5 USPQ 1596 (Fed. Cir. 1988); *In re*

*Jones*, 21 USPQ2d 1941 (Fed. Cir. 1992); *In re Nilssen*, 7 USPQ2d 1500 (Fed. Cir. 1988). Both the teaching and a reasonable expectation of success must be found in the prior art, not in Applicants' disclosure. *In re Vaeck*, 20 USPQ2d 1438 (Fed.Cir. 1991). Where no expressed teaching or suggestion is apparent from the references, the Examiner must establish, *with evidence or reasoning*, why one skilled in the art would have been led by the relevant teachings of the applied references to make the proposed combination. *In re Gordon*, 221 USPQ 1125 (Fed. Cir. 1984); *ACS Hospital System, Inc. v. Montefiore Hospital*, 221 USPQ 929 (Fed. Cir. 1984).

In the present instance, Hafeez uses semi-blind initialization rather than pilot symbols from *both* users. Moreover, Dabak teaches away from handling asynchronous users. Thus, a motivation to combine these references to achieve Applicant's claimed invention cannot exist. For all of the above reasons, Applicant submits that claims 1, 7, 11-13, 19, and 27 as amended are not obvious in view of Dabak in combination with Hafeez.

Applicant has cancelled dependent claims 4-6, 16-18, 30, and 34 for consistency with amended claims 1, 13, and 27. All other dependent claims depend from a claim amended as discussed above and are therefore patentable for at least the same reasons discussed above. However, Applicant would additionally like to point out that although the Examiner, with respect to Applicant's claims 9, 10, and 23-26, looks to Hafeez for the use of a pulse shape component; the pulse shaping discussed in Hafeez is not the same as the pulse shape component claimed in the present application. In Hafeez, pulse shaping refers to Nyquist pulse shaping computing in a pulse-autocorrelation matrix used for medium response estimation. Additionally, Hafeez is using a joint MLSE approach that uses hypothesized symbols in a trellis. Applicant's invention as claimed, by contrast, refers to a "pulse shape component" used in a "detector," a "detector unit," or for "jointly detecting."

To further distinguish the pulse shape component of Applicant's invention from Hafeez, these claims have been amended herein to recite that the pulse shape component is applied to "symbols from prior iterations." Support for this recitation can be found in the specification at page 20, line 10. Thus, claims 9, 10, and 23-26 are patentable for at least these additional reasons.

Applicant further points out that the pulse-shape component can also be applied in an iterative process to batch detection. This, the recitation discussed above has further been included in amended claims 1, 11, 13 and 27. This recitation further distinguishes these claims from Dabak and Hafeez. Applicant in particular notes that the approach in Hafeez is inherently a recursive process and thus not compatible with the iterative, batch process disclosed in Applicant's application and specifically claimed in amended claims 1, 11, and 13.

Applicant has added new claims 35-39 to further define embodiments of the invention, in that some embodiments provide for detection of symbols "out of natural order." These claims are patentable for all the reasons discussed above with respect to their independent claims. However, this capability is also not disclosed or suggested in either Dabak or Hafeez. Support for this recitation can be found in page 19, lines 18-19. Claims 35-40 are patentably distinct from the combination of Dabak and Hafeez for at least this additional reason.

For the foregoing reasons, Applicant submits that the present claims as amended are in condition for allowance. Reconsideration of the application as amended is hereby requested.

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